

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No: 10/718,395
Applicant: Craig A. Bianchini
Filed: November 20, 2003
Title: METHOD FOR MITIGATING THE INTERFERENCE CAUSED BY
HIGH-MOLECULAR WEIGHT BY-PRODUCTS IN PULPING
PROCESSES
TC/A.U.: 1731
Examiner: Marc S. Alvo
Confirmation No.: 9752
Notice of Appeal Filed: July 25, 2005
Docket No.: CIN-100US1

APPEAL BRIEF UNDER 37 C.F.R. § 1.192

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

S I R :

The Applicant (now Appellant) appeals from the Final Rejection dated January 24, 2005, which finally rejected claims 18 and 21-27 of the subject application. A Notice of Appeal and a Request for Extension of Time were forwarded under a Certificate of Mailing dated March 28, 2003 and acknowledged as being received on April 2, 2003, by the United States Patent and Trademark Office.

I. REAL PARTY IN INTEREST

The real party in interest is the individual applicant Craig A. Bianchini.

II. NO REALTED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to the Appellant, or the Appellant's legal representative, which would directly affect, be directly affected by, or have a bearing on the Honorable Board's decision in this Appeal.

III. STATUS OF THE CLAIMS

Claims 18 and 21-27 stand as finally rejected. Claims 18, 21, 22 and 23 are independent claims. Claim 24 depends on claim 18, claim 25 depends on claim 21 claim 26 depends upon claim 22 and claim 27 depends on claim 23. Appellant respectfully submits that independent claim 18, 21, 22 and 23 are patentable and, relies, for support of this contention on the arguments presented herein below. In view of the fact that claims 18, 21, 22 and 23 are patentable, claims dependent thereon would also be patentable. In summary Appellant is appealing the Examiner's decision of finally rejected claims 18 and 21-27.

IV. STATUS OF THE AMENDMENTS

The above-identified application was filed on November 20, 2003, as a divisional of U.S. Application Serial No. 09/917,337 filed July 27, 2001, now U.S. Patent 6,752,903. As part of the original application papers Appellant filed a preliminary amendment canceling claims 1-17 and amending claims 18-22. The original application contained 6 claims. In a first Office Action dated July 13, 2004, the Examiner required an election under 35 U.S.C. § 1.21 between claims 18 and 21-23 (Group I) and claims 19-20 (Group II), acknowledged Appellant's provisional election to prosecute claims 18 and 21-23 in a telephone interview on June 28, 2004 and rejected claim 23 under 35 U.S.C. § 103(a) over Samuelson U.S. Patent 3,843,473, claim 21 under 35 U.S.C. § 103(a) over Samuelson as applied to claim 23 further in view of Thorsell, et al. U.S. Patent 4,670,098, claim 22 under 35 U.S.C. § 103(a) over Samuelson in view of Davies et al. U.S. Patent 5,127,992, and claim 18 under 35 U.S.C. § 103(a) over Samuelson in view of Thorsell et al. further in view of Elton U.S. Patent 4,806,203.

Appellant filed an Amendment and a Request for Extension of Time under Certificate of Mailing dated 2 November 2004. Appellant cancelled claims 19 and 20, amended claims 18 and 21-23 and added new claims 24-27 and argued the impropriety of the rejection of claims 18 and 21-23.

The Examiner issued a Final Rejection on January 24, 2005, rejecting claims 18 and 21-27. The Examiner rejected claims 21, 23, 25 and 27 under 35 U.S.C. § 103(a) over Samuelson U.S. Patent 3,843,473 in view of Thorsell et al. U.S. Patent 4,670,098, claims 22 and 26 under 35 U.S.C. § 103(a) over Samuelson in view of Davies U.S. Patent 5,127,992 in view of Thorsell, and claims 18 and 24 under 35 U.S.C. § 103(a) over Samuelson in view of Thorsell et al. further in view of Elton U.S. Patent 4,806,203.

Appellant filed a Notice of Appeal and a further Request for Extension of Time under Certificate of Mailing dated July 25, 2005, these documents being acknowledged as received on July 27, 2005.

V. SUMMARY OF THE INVENTION

The present invention relates to improving the overall efficiencies of various aspects of a wood fiber pulping process by removing all or a portion of high molecular weight organic by-products from washing fluids to increase concentration gradients for mass transfer.

In one aspect the present invention relates to a method for improving the efficiency of a wood pulping process using a displacement batch digester that uses untreated pulp washing fluid to displace hot black liquor from the digester to an accumulator. In this aspect the untreated pulp washing fluid is subjected to removal of high molecular weight organic by-products from the washing fluid prior to the washing fluid being used to displace the hot black liquor. (claim 18)

In a second aspect the present invention is a method for improving the efficiency of a wood pulping process incorporating dilution of pulp by removing high molecular weight by-products from a filtrate taken from any washing step of the process and using the treated filtrate in any dilution zone, pipe or equipment in the pulping process to dilute the pulp. (claim 21)

Another aspect of the present invention is a method for improving the efficiency of wood pulping process employing a multi-stage washing process wherein

a washing liquid is separated from the wash fibers in one of a last stage or any stage except the first stage of the multi-stage washing process, the separated washing fluid being treated to remove high molecular weight organic by-products to produce a washing liquid having a reduced quantity of high molecular weight organic by-products so that the cleaned or treated washing liquid can be used in any other stage of the multi-stage washing process (claim 22).

In yet another aspect of the present invention is a method for improving the efficiency of a wood pulping process using an oxygen delignification stage which is proceeded by and followed by washing of the pulp by separating washing fluid from the pulp after any one of the washing steps proceeding or any one of the washing steps following the oxygen delignification step and separating high molecular weight organic by-products from the washing fluid to produce a cleaned washing fluid with increased concentration gradients for mass transfer and using the cleaned washing fluid in any one of any washing operation or to dilute pulp prior to, after, or during oxygen delignification (23).

In order to help understand Appellant's position and the art the following terms of art should be kept in view.

1. Stock - pulp
2. Pulp - a mixture of cellulosic fiber and liquid at any consistency (the amount of liquid to solid). In the fiberline, the liquid is usually a liquor composed of various chemicals.
3. Digester House - the processing area of a pulp mill fiberline utilizing cooking equipment that processes wood and separates the fiber from the wood, called delignification. The fresh cooking liquor (mixture of white and black liquors) used becomes spent cooking liquor (black liquor with higher solids).
4. BS Washing - the processing area of a pulp mill fiberline utilizing cleaning equipment that washes the residual cooking chemicals and cooking byproducts from the pulp after cooking. The equipment is typically rotary filters or diffusion washers, all usually

referred to as 'BS washers'. The fiber is brown in color and hence it is called brownstock (usually abbreviated as BS).

5. Bleach Plant - the plant that treats the BS to produce white fiber. Not all fiberlines have bleach plants. For example, a fiberline to make fiber for boxes, sacks or brown bags does not include a bleach plant.
6. Bleaching Sequence - the stages of treatment to bleach the fiber. A typical sequence today is, in order of pulp treatment: ClO_2 - O_2 bleaching - ClO_2 - ClO_2 . Note that there would be a washing device between each reactor, or stage, that creates an effluent (pollution stream to the environment). The effluents from the different stages are different in composition where the Cl_2 stage effluents are acidic while the O_2 bleaching effluent is alkaline and therefore are not mixed if they are reused since they will neutralize each other.
7. Fiberline - the area of a pulp mill that creates usable fiber, brown or white in color. An 'unbleached' fiberline (to produce brownstock) does not have a bleach plant while a 'bleached' fiberline includes a bleach plant (to produce white pulp).
8. Brownstock Effluent - the filtrate from the BS washing plant that is sent to the evaporator plant for concentration and burned in the recovery boiler to burn off the organic fraction and recover the inorganic chemicals used for cooking. This liquor is continuously recycled in the pulp mill. That is, it does not generate a pollution stream.
9. Bleach Plant Effluent - the filtrates from the bleach plant that are not recycled due to the dangerous chemicals dissolved in them, such as chlorine, as well as other problems of recycling this liquid. They are disposed to the environment (sewered) and create the only open chemical loop in a pulp mill. In other words, the chemicals are continuously added to the bleach plant instead of being regenerated from the effluent as is the black liquor/cooking

liquor cycle. There is intense research ongoing in order to 'close' this loop.

10. Continuous Digester -a continuous reactor used in the pulp industry that includes the functions of the digester house and BS washing. The wood is fed at the top of the vertical reactor and is delignified as it travels downward (y direction). Fresh cooking liquors are continuously pumped through the digester in the horizontal direction (x direction) and removed as spent cooking liquor on the opposite side of the insertion for refreshing and recycle. After delignification, the pulp enters the final 'zone' at the bottom of the reactor to be washed in order to remove residual cooking chemicals. This function is the same as the BS washing plant.

Present claims 18 and 24 are drawn to improving the efficiency of a wood pulping process by the method recited.

Claims 21 and 25 are drawn to a method for improving the efficiency of a wood pulping process by treating filtrate by the method recited.

Claims 22 and 26 are drawn to a method for improving the overall efficiency of a wood pulping process using a multi-stage washing process by the method recited.

Claims 23 and 27 are drawn to a method for improving the efficiency of a wood pulping process using an oxygen delignification stage by the method recited.

Appellant respectfully contends that the present claims are patentable over (Samuelson U.S. Patent 3,843,473; Thorsell et al. U.S. Patent 4,670,098 or Davies et al. U.S. Patent 5,127,992) as well as any art of record in the application. None of the art available at the time Appellant made his invention would have led a worker skilled in the art to solve the problem or problems addressed by Appellant. Even, assuming that the references were combined, the claimed invention is patentably distinct from those references as combined in the absence of further

modification of the combination, which modification can only be accomplished by using Appellant's own teaching to not only select but to interpret the references. Lastly, Appellant contends each of the cited references individually teach away from the modifications necessary to the references either individually or collectively to achieve Appellant's invention.

VI. ISSUES

The issues on Appeal are:

- 1) Where claims 21, 23, 25 and 27 properly rejected under 35 U.S.C. § 103(a) as being unpatentable over Samuelson in view of Thorsell et al.
- 2) Where claim 22 and 26 properly rejected under 35 U.S.C. § 103(a) over Samuelson in view of Davies et al. in view of Thorsell et al.
- 3) Where claim 18 and 24 properly rejected under 35 U.S.C. § 103(a) over Samuelson, in view of Thorsell et al. further in view of Elton.

VII. GROUPING OF THE CLAIMS

Claims 18-24 stand as one embodiment of the invention.

Claims 21 and 25 stand as a second embodiment of the invention.

Claims 22 and 26 stand as a third embodiment of the invention.

Claims 23 and 27 stand as a fourth embodiment of the invention.

VIII. ARGUMENT

For the reasons set forth below Appellant respectfully submits that the Final Rejection was improperly granted and should be withdrawn.

A. Claims 21, 23, 25 and 27 Are Not Obvious over Samuelson in view of Thorsell et al.

Appellant respectfully contends the claims in the application are patentable because there is no teaching or suggestion by any of the cited references either alone or in combination or no suggestion or motivation taught or suggested by the references to combine the cited references (Samuelson, Thorsell et al.), to solve the problem addressed by Appellant at the time of his invention. Appellant solved a problem in the art by enabling the pulp producer to achieve greater efficiencies in the processing of the pulp by reclaiming and reusing wash water that has been cleaned of high molecular weight by-products. This was neither taught nor suggested by the prior art nor accomplished in any of the prior art processes.

Samuelson teaches improving wood pulping, his teaching is actually for a bleach plant and not a BS fiberline (which includes the digester house and BS washing) by treating a waste bleach liquor, which has been separated from the pulp, with a membrane and/or filter to remove the organic substances from the aqueous solution and using the filtered material to wash the cellulose subsequent to delignification with an oxygen containing gas, see column 13, lines 1-36. The word delignification is a misnomer since this application is essentially a whitening process in the bleach plant. Chemically speaking, the removal of lignin does make the pulp whiter as does the chemical modification of the chromophore groups (that also occur in the bleach plant). Due to this difference, the word delignification is reserved for the digester house in the industry. Obviously the aqueous solution has been removed from the pulp after bleaching as it is a solution and not a slurry. Thorsell et al. teach maintaining the withdrawal of the pulping liquor at a rate sufficient to maintain the high molecular weight substances at a low concentration Thorsell et al. teach this in the digester house only. It would not have been obvious to the artisan that maintaining a low concentration of high molecular weight substances in the recycle liquor would increase the "concentration gradient" between the wash liquor. Again, Thorsell et al. teach to extract cooking liquor, filter it, then return it to the

digester while cooking the pulp, not recycle wash liquor around an O₂ delignification reactor in the BS washing area (low concentration of high molecular weight substances) and the pulp slurry (high concentration of high molecular weight substances) being washed. The Examiner has argued that, " Thorsell et al. teach adding liquor from the screening section or bleaching section that is passed through the separator (7) for cleaning and using the liquor as diluting liquor in the pulp washing stage (column 6, lines 40-45)". This is an incorrect interpretation. Thorsell et al. disclose cleaning the liquor for use to makeup fresh cooking liquor (which is made up of white liquor diluted with black liquor). That is, Thorsell et al. are suggesting using cleaned filtrate from the screening room (which is weak black liquor since the screening room is in the BS washing plant), cleaning it and then using it with white liquor to create fresh cooking liquor (recall, fresh cooking liquor is white liquor diluted with black liquor). It would not have been obvious to the routineer that the spent bleach liquor of Samuelson could be added as dilution liquor as taught by Thorsell, et al. Again, the Examiner is misinterpreting what Thorsell et al. are teaching. Spent bleach liquor is never used in the black liquor side of the pulp mill. The black liquor side of the pulp mill is the BS washing and digester house and in fact, Davies et al. clearly delineates this in FIG. 1. Based on the Examiners terse understanding of pulping, it seems to him that these liquors can be cleaned and interchanged at will, but in fact they have different water chemistry (pH, DS, etc.). Pulp mills would very much like to send all bleach plant liquors to the black side so that it can be burned and recycled to eliminate the pollution problem with bleach plants. Both Samuelson and Thorsell et al. do not teach separating the organic material from the filtrate before using the liquor. It is submitted neither Samuelson or Thorsell et al. contemplated the processes disclosed and claimed by Appellant.

Samuelson concerns itself with preparing the pulp from a continuous digester for the next stage of treatment in an O₂ bleaching sequence in an effort to lower the pollution load from the effluents of said processes.

The process of the Samuelson uses apparatus in combination as an intermediate pretreatment system between a continuous digester for preparing cellulose pulp from wood or other source and a reactor **for alkaline oxygen gas bleaching** [emphasis added] of cellulose pulp. In accordance with another

embodiment of the Samuelson invention, the aqueous solution containing organic substances or a portion of this solution is pretreated before being used to wash the cellulose pulp **subsequent to bleaching** [emphasis added] the same with an oxygen-containing gas. In order to lower still further the discharge of organic substances at the conclusion of the process, the cellulose pulp can be washed subsequent to the **alkali-oxygen gas bleaching process** [emphasis added] using an aqueous solution containing an organic substance.

Thorsell et al. concern themselves with recycling cooking liquors during the cooking phase of pulp production in the digester house. The liquor is removed from the digester, filtered and then returned to the digester on a continuous or a semi-continuous basis. There is not a net increase or decrease in the volume of liquor in the digester since what is removed is replaced.

Thorsell et al.'s process includes withdrawal of pulping liquor continues at a **rate sufficient to maintain a low concentration in the pulping liquor** [emphasis added] of the high molecular weight substances.

In summary Appellant submits the rejection of claims 21, 23, 25 and 27 under 35 U.S.C. § 103(a) over Samuelson in view of Thorsell et al. is not well taken. Contrary to the allegation of the Examiner it is respectfully submitted that Samuelson et al. were concerned with the washing of pulp before and after an oxygen bleaching stage not an oxygen delignification stage.

Samuelson neither teach nor suggest subjecting the fluid to filtration to remove high molecular weight organic by-products from the washing fluid to thus produce a cleaned washing fluid with increased concentration gradients for mass transfer.

For the reasons set forth above it is respectfully submitted that Samuelson et al. do not teach or suggest the use of a filtrate treated to remove high molecular weight organic by-products to yield a treated filtrate with lower concentration of colloidal and/or high molecular weight organic by-products to increase concentration gradients for mass transfer and using the treated filtrate in a

dilution zone, pipe or equipment in the pulping process to dilute pulp. Thorsell et al. show no use of ultra-filtration in the brown stock washing and oxygen delignification process areas of a pulp mill as they have in the cooking area of the pulp mill. Thorsell et al. are only concerned or familiar with the cooking process and fail to appreciate, teach or suggest the benefit of ultra-filtration in other areas of a pulp mill. Appellant submits that if Thorsell et al. knew the benefit of ultra-filtration in the other areas of a pulp mill they surely would have disclosed and claimed such processes.

Furthermore, Thorsell et al. disclose a process for removing metal ions with magnesium by either the physical adsorption, or the chemical process of absorption, which process favored by Thorsell et al. is not exactly stated.

It is respectfully submitted that the Examiner has fallen into the trap of using Appellant's own teaching to not only select but to interpret the references. This is clearly contrary to existing Patent Law.

In view of the foregoing arguments it is submitted that the final rejection of claims 21, 23, 25 and 27 under 35 U.S.C. § 103(a) should be reversed.

B. Claims 22 and 26 are Not Obvious over Samuelson in view of Davies et al. in view of Thorsell et al.

For the reasons stated above it is submitted that the teachings of Samuelson and Thorsell et al. are fatally defective. The defects are not overcome by Davies et al.

Davies et al. concerns itself with treatment of acidic effluent from a chlorine based bleach plant in order to decrease pollution loading to the environment.

Davies et al. states it is an object of their invention to provide a process for the treatment of effluents resulting from a pulp bleaching process utilizing chlorine and related chemicals, **to recover spent bleaching chemicals**

therefrom and eliminate the discharge of chlorine compounds [emphasis added].

Davies et al. teaches adding liquor from the screening section or bleaching section multi-stage washers and passed through filtration unit (5) before recycling the unit to the washing stage (Brown stock washer (BSDW)). The Examiner is confused about this item. Davies et al. clearly state that they are filtering the organics from the O₂ bleach stage to use the cleaned fluid in the bleach plant (to lower the pollution load) and send the removed organic material back to the BS washing plant. Davies et al. are adding more organics to the BS washing plant which will decrease the mass transfer and washing efficiency in the BS washing plant - the opposite of what is accomplished by Appellant's invention. The reason Davies et al. is doing this is because they did not understand what this would do to the BS washing operation and only wanted to rid the bleach plant of the organics by dumping them into the black liquor cycle for incineration in the recovery boiler. It would not have been obvious to the routineer that the filtered spent bleach liquor of Davies et al. could be used as the wash liquor of Samuelson as Samuelson teaches using spent bleach liquor from which the organic material has been removed. The liquor of Davies et al. is the same liquor used by Samuelson, e.g. spent bleach liquor which has been filtered to remove organic material. Again the Examiner is confused about this process. This liquor is not the same liquor since the bleach plant liquors have different chemistry than the cooking liquors and the BS liquors.

It is respectfully submitted that the Examiner is using appellant's own teaching to not only select but to interpret the references, clearly contrary to existing Patent Law. Furthermore, since the teaching of Thorsell et al. was available at least as early as June 10, 1987, the teaching of Samuelson available at least as early as October 1974, surely if the processes of Davies et al. were applicable to the earlier teachings that would have been disclosed in Davies et al., since Davies et al. issued on July 7, 1992.

In view of the foregoing arguments it is respectfully submitted that the final rejection of claims 22 and 26 under 35 USC 103(a) should be reversed.

C. Claims 18 and 24 are not Obvious over Samuelson in view of Thorsell et al. in view of Elton

For the reasons stated above it is respectfully submitted both Samuelson and Thorsell et al. are fatally defective. The defects are not cured by Elton.

Appellant uses a lower organic concentration liquor as the displacing liquor so that the pulp in the digester is actually 'washed' more efficiently relative to using unfiltered displacing liquor which is the standard practice today. The use of an accumulator, e.g. collector, is well known in the art as evidenced by Elton. Elton is diluting the cooking liquors in an accumulator with fresh alkali (that does not have organic material) to lower the intrinsic concentration of organics (g/1). This method is truly 'dilution' and Elton does not filter the material in the accumulator. Many processes in the world use an accumulator. Elton also heats the liquor in an accumulator to condense the organics. There is no connection between Appellant's process and that of Elton, except that Elton is trying to accomplish the same end point as Appellant, but, by a different method. An accumulator is used to hold the liquor before it is added to the digester. It would not have been obvious to use an accumulator to hold the liquor of Thorsell et al. before it is added to the digester as taught by Elton. Liquor being held in an accumulator before being used in the digester is Appellant's invention which is neither taught nor suggested by the art.

In view of the foregoing the final rejection of claims 18 and 24 under 35 U.S.C. § 103(a) should be reversed.

The PTO has the burden under Section 103 to establish a *prima facie* case of obviousness. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir 1988). "It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *Id.*; see *In re Levengood*, 28 USPQ2d 1300, 1301 (PTO Bd. Pat. App. & Inter. 1993) ("In order to establish a *prima facie* case of obviousness, it is necessary for the examiner to present evidence . . . that one having ordinary skill in the art would have been led to

combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention.") (emphasis in original); see *also* MPEP § 706.02. This has not been done. The applied references have been improperly combined, using hindsight reconstruction, without evidence to support the combination.

"Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is a rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references." *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) (reversing PTO's obviousness and obviousness-type double patenting rejections of an application directed to a pumpkin-type trash bag) (citing the three sources for a possible motivation or suggestion to combine from *In re Rouffet*, 47 USPQ2d 1453 (Fed. Cir. 1998), and stating, "The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. . . . Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.' . . . Nowhere does the Board particularly identify any suggestion, teaching, or motivation to combine the . . . references.").

A specific fallacy in the reasoning of the Examiner lies in ignoring the precise teachings of each of the references. In addition to the actual disclosures outlined above, none of the reference are concerned with the focus of the present invention, which (as stated in the current specification) was developed for the purpose of providing a method for improving the overall efficiency of a digesting step of a wood fiber pulping process. Moreover, appellant respectfully submits that the Examiner has used his teaching to piece together parts of the prior art to conclude that it would have been obvious to reach that which is presently claimed. Under comparable circumstances, the CCPA stated:

[A] person having the references before him who was not cognizant of appellant's disclosure would not be informed that the problems solved by the appellant ever existed. Therefore, can it be said that these references which never recognized appellant's problem would have

suggested its solution? We think not, and therefore feel that the references were improperly combined since there is no suggestion in either of the references that they can be combined to produce appellant's result.

In re Shaffer, 108 USPQ 326, 329 (CCPA 1956).

When an obviousness determination depends on a selective combination of prior art references, there must be some reason for the combination other than hindsight gleaned from the invention itself. The prior art under consideration must contain a teaching or motivation or incentive or suggestion to do so. The governing legal principle was stated precisely in *Northern Telecom, Inc. v. Datapoint Corp.*, 15 USPQ 1321, 1323 (Fed. Cir. 1990):

It is insufficient that the prior art disclosed the components of the [claimed] device, either separately or used in other combinations; there must be some teaching, suggestion, or incentive to make the combination made by the inventor. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1988) (insufficient to select from the prior art the separate components of the inventor's combination, using the blueprint supplied by the inventor); *Rosemount, Inc. v. Beckman Instruments, Inc.*, 727 F.2d 1540, 1546, 221 USPQ 1, 7 (Fed. Cir. 1984) ("As this court has held, 'a combination may be patentable whether it be composed of elements all new, partly new or all old'" (citations omitted); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 220 USPQ 303, 312 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (individual references can not be "employed as a mosaic to recreate a facsimile of the claimed invention.")[.]

See also In re Levengood, 28 USPQ2d at 1301 ("an examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done.").

To the extent the Examiner has relied on motivating forces, these too are misplaced for the reasons set out above. Here again, appellant respectfully submits that only through hindsight gleaned from the present invention could a conclusion that the art teaches or suggests a motivation to combine the references have been reached.

Moreover, the appellant submits that but for his teaching of his invention in the present patent application, no one skilled in the art would have read the references to come up with a process that teaches removal of high molecular weight organic by-products from a washing fluid that can then be reused to increase the overall efficiency of the process.

Once again Appellant submits that the Examiner has fallen into the trap of using his teaching to select, and interpret the references. This is clearly contrary to existing Patent Law. *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 220 USPQ 303, 312 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (individual references can not be "employed as a mosaic to recreate a facsimile of the claimed invention."). For the reasons provided above, appellant submits that claims 18 and 21-27 are improperly rejected.

IX. EVIDENCE APPENDIX

None

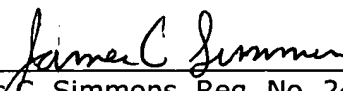
X. RELATED PROCEEDINGS APPENDIX

None

XI. CONCLUSION

In view of the foregoing argument, appellant submits that the subject application is in condition for allowance. Appellant respectfully requests that the Honorable Board reverse the final rejection of the pending claims in the application identified above.

Respectfully submitted,



James C. Simmons, Reg. No. 24,842
Attorney for Applicant

JCS/mc

Dated: December 13, 2005

P.O. Box 980
Valley Forge, PA 19482-0980
(610) 407-0700

The Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

13 December 2005
James C. Simmons

APPENDIX A

18. A method for improving the efficiency of a wood pulping process using a displacement batch digester wherein said displacement batch digester uses untreated pulp washing fluid to displace hot black liquor from said digester to an accumulator, comprising the step of passing said untreated pulp washing fluid through filtration media to remove all or a portion of high molecular weight organic by-products from said washing fluid to increase concentration gradients for mass transfer prior to said washing fluid being used to displace said hot black liquor.

21. A method for improving the efficiency of a wood pulping process incorporating dilution of pulp comprising the step of:

withdrawing filtrate containing high molecular weight organic by-products from any washing step;

passing said filtrate through a filter media to remove high molecular weight organic by-products to yield a treated filtrate with a lower concentration of colloidal and/or high molecular weight organic by-products to increase concentration gradients for mass transfer; and

using said treated filtrate in any dilution zone, pipe or equipment in said pulping process to dilute said pulp.

22. A method for improving the efficiency of a wood pulping process including fiber washing in a multi-stage washing process comprising the steps of: separating washing liquid from said washed fibers in one of a last stage or any stage except said first stage of said multi-stage washing process, passing said washing liquid through a filtration media to remove high molecular weight organic by-products from said washing liquid to produce a washing liquid having a reduced quantity of high molecular weight organic by-products and increased concentration gradients for mass transfer, and using said washing liquid having a reduced quantity of high molecular weight organic by-products in a stage of said multi-stage washing process preceding the stage from which said washing liquid was withdrawn.

23. A method for improving the efficiency of a wood pulping process that includes oxygen as a delignification stage proceeded by and followed by washing of pulp comprising the steps of:

separating washing fluid from said pulp after one of any of the washing steps proceeding, or any of the washing steps following said oxygen delignification step, passing said separated washing fluid from said pulp through a filtration media to remove high molecular weight organic by-products from said washing fluid to produce a cleaned washing fluid with increased concentration gradients for mass transfer, and using said cleaned washing fluid in any one of any washing operation or to dilute said pulp prior to, after, or during oxygen delignification.

24. A method according to claim 18 including the step of using membrane separates to remove said high molecular-weight organic by-products from said liquor.

25. A method according to claim 21 including the step of using membrane separation to remove said high molecular-weight organic by-products from said filtrate.

26. A method according to claim 22 including the step of using membrane separation to remove said high molecular-weight organic by-products from said washing liquid.

27. A method according to claim 23 including the step of using membrane separation to remove high molecular-weight by-products from said washing fluid.